

Serial No. 09/749,473

**DRAFT**REMARKS

Favorable reconsideration of this application as presently amended and in light of the following discussion is respectfully requested.

Claims 1 and 3-14 are pending in the present application. Claims 1, 3-12, and 14 are amended by the present amendment.

In the outstanding Office Action, Claims 3 and 10-12 were rejected under 35 U.S.C. § 112, second paragraph; Claims 1-7 and 9-13 were rejected under 35 U.S.C. § 103(a) as unpatentable over Sugita et al. (U.S. Patent No. 4,687,712, herein "Sugita") in view of Hokkyo et al. (U.S. Patent No. 6,387,483 B1, herein "Hokkyo") and Michaelsen et al. (U.S. Patent No. 4,245,008, herein "Michaelsen"); Claim 8 was rejected under 35 U.S.C. § 103(a) as unpatentable over Sugita in view of Hokkyo and Lal et al. (U.S. Patent No. 5,834,111, herein "Lal"); and Claim 14 was rejected under 35 U.S.C. § 103(a) as unpatentable over Sugita in view of Hokkyo and Kanbe et al. (U.S. Patent No. 6,221,508 B1, herein "Kanbe").

In response to the rejection of Claims 3 and 10-12 under 35 U.S.C. § 112, second paragraph, these claims are amended in light of the comments noted in the outstanding Office Action and as shown in the marked-up copy. Additionally, these claims are amended to correct minor informalities and to conform to standard U.S. claim drafting practice. No new matter has been added. Accordingly, it is respectfully requested that this rejection be withdrawn.

Claims 1-7 and 9-13 were rejected under 35 U.S.C. § 103(a) as unpatentable over Sugita in view of Hokkyo and Michaelsen. That rejection is respectfully traversed.

Independent Claim 1 is amended to correct minor informalities. No new matter has been added.

Serial No. 09/749,473

**DRAFT**

Independent Claim 1 is directed to a magnetic recording medium having a non-magnetic substrate, at least two soft magnetic layers divided by a separate layer therebetween, and at least one magnetic recording layer formed on the substrate via the at least two soft magnetic layers. A surface roughness of the magnetic recording medium is at most 50Å and a product of a maximum permeability and a thickness of one soft magnetic layer of the at least two soft magnetic layers is at least 1,000,000 HÅ/m.

As explained in the specification at page 7, line 10, to page 8, line 13, the magnetic recording medium of Claim 1 achieves a surface roughness that reduces a noise at a time of a recording/reproduction operation and improves a yoke effect that also reduces the noise at the time of the recording/reproduction operation. Therefore, the surface roughness and the improved yoke effect synergically reduce the noise at the time of the recording/reproduction operation in the magnetic recording medium of Claim 1.

The outstanding Office Action recognizes at page 4, item 9, that Sugita “does not teach a magnetic recording medium wherein the medium has a surface roughness Ra of < 50 angstroms.”

The outstanding Office Action relies on Hokkyo for these teachings. More specifically, the outstanding Office Action states at page 5, lines 4-8, that Hokkyo teaches “adding a smoothness control layer that ... results in subsequent layers formed on top of the smoothness control layer also exhibiting improved smoothness.” Further, the outstanding Office Action states at page 5, item 13, that “the smoothness control layer serves to improve the surface roughness of the soft magnetic layer, [and] it necessarily improves the smoothness of the magnetic recording layer.” However, the above remarks noted in the outstanding Office Action are valid for the specific configuration showed by Hokkyo, as explained below.

Serial No. 09/749,473

**DRAFT**

Hokkyo shows in Figure 2 a magnetic recording media 110 having a substrate 112, a Cr layer 114 acting as a smoothness control layer, a soft magnetic layer 116 formed on the smoothness control layer 114, and a magnetic recording layer 118 formed on the soft magnetic layer 116. The assertion of the outstanding Office Action that there is a relationship between the smoothness layer 114 and the roughness of the magnetic recording medium 110 appears to be correct for *one soft magnetic layer*, as described by Hokkyo in Figure 2. However, if *at least two soft magnetic layers* as recited in Claim 1 are present between the smoothness control layer 114 and the magnetic recording layer 118 of Hokkyo, then there is no teaching or suggestion in Hokkyo of a systematic relationship between the smoothness control layer 114 and the roughness of the magnetic recording medium 110. Accordingly, there is no suggestion or motivation to introduce *the plural permalloy layers* of Sugita between the smoothness control layer 114 and the magnetic recording layer 118 in Hokkyo to achieve an improved roughness of the magnetic medium 110. In addition, none of the applied art shows that a surface roughness of the *magnetic recording medium* is at most 50Å, as recited in Claim 1.

Further, Michaelsen is asserted for teachings disclosed in the dependent claims. However, Michaelsen does not cure the deficiencies above-noted regarding Claim 1.

Accordingly, it is respectfully submitted that independent Claim 1 and each of the claims depending therefrom patentably distinguish over the applied art.

Claim 8 was rejected under 35 U.S.C. § 103(a) as unpatentable over Sugita in view of Hokkyo and Lal. That rejection is respectfully traversed.

Lal is asserted in the outstanding Office Action at page 8, item 25, for teaching a magnetic recording medium having a chromium underlayer and a non-magnetic isolation layer manufactured from a material of one of chromium, titanium, molybdenum, zirconium,

**DRAFT**

Serial No. 09/749,473

aluminum, etc. However, Lal does not cure the deficiencies above-discussed regarding independent Claim 1. Because Claim 8 depends on independent Claim 1, which is believed to be allowable, it is respectfully submitted that Claim 8 patentably distinguishes over the applied art.

Claim 14 was rejected under 35 U.S.C. § 103(a) as unpatentable over Sugita in view of Hokkvo and Kanbe. That rejection is respectfully traversed.

The outstanding Office Action relies on Kanbe for teaching a magnetic recording apparatus. However, Kanbe does not cure the deficiencies noted above regarding independent Claim 1. Because independent Claim 14 recites all the features of independent Claim 1, it is respectfully submitted that independent Claim 14 patentably distinguishes over the applied art.

Since the present amendment raises no new issues, entry of this amendment under 37 C.F.R. § 1.116 is believed to be in order and it is therefore respectfully requested.